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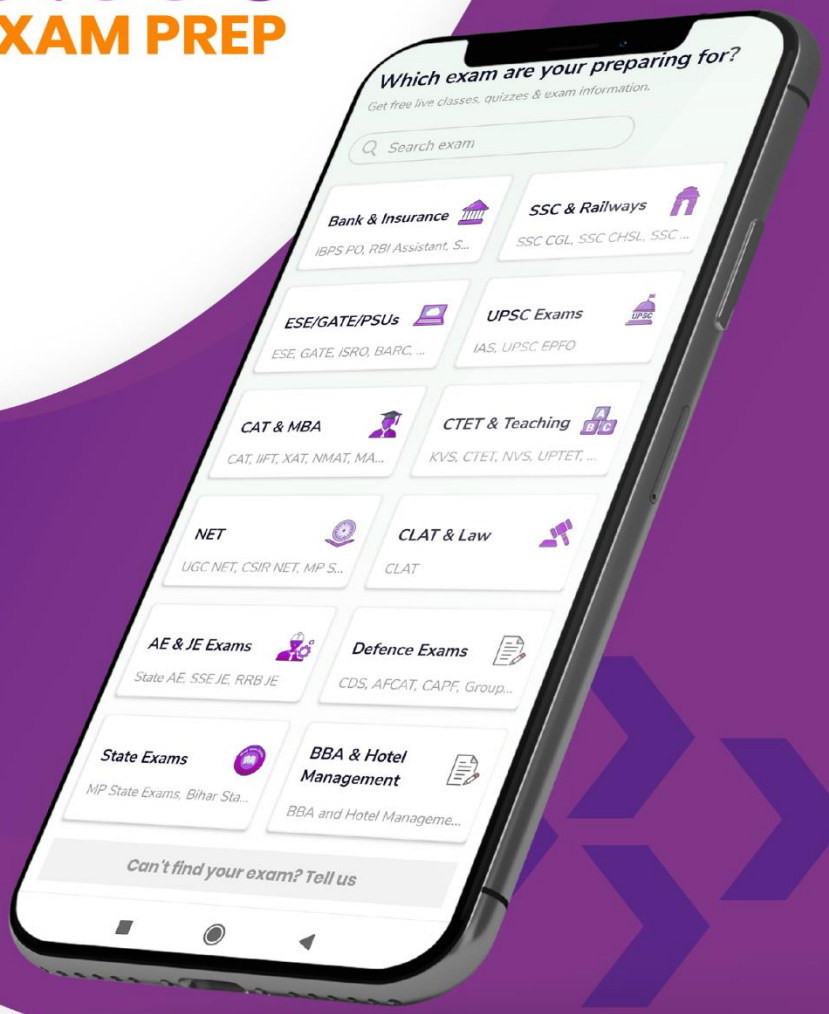

List of Important Algebra Formulae for SSC Exams

List of Important Algebra Formulae

- $a^2 – b^2 = (a-b)(a+b)$
- $(a+b)^2 = a^2 + 2ab + b^2$
- $(a-b)^2 = a^2 – 2ab + b^2$
- $a^2 + b^2 = (a-b)^2 +2ab$
- $(a+b+c)^2 = a^2+b^2+c^2+2ab+2ac+2bc$
- $(a-b-c)^2 = a^2+b^2+c^2-2ab-2ac+2bc$
- $a^3-b^3 = (a-b) (a^2 + ab + b^2)$
- $a^3+b^3 = (a+b) (a^2 – ab + b^2)$
- $(a+b)^3 = a^3+ 3a^2b + 3ab^2 + b^3$
- $(a-b)^3 = a^3- 3a^2b + 3ab^2 – b^3$
- "n" is a natural number, an – bn = (a-b) (an-1 + an-2b +….bn-2a + bn-1)
- "n" is a even number, an + bn = (a+b) (an-1 – an-2b +….+ bn-2a – bn-1)
- "n" is an odd number an + bn = (a-b) (an-1 – an-2b +…. – bn-2a + bn-1)
- (am)(an) = am+n (ab)m = amn

<u>Some more Algebra formulas</u>

- $(a + b)^4= a^4+ 4a^3b + 6a^2b^2 + 4ab^3 + b^2$
- $(a – b)^4= a4 – 4a^3b + 6a^2b^2 – 4ab^3+ b^4$
- $a^4 – b^4= (a – b)(a + b)(a^2 + b^2)$
- $a^5 – b^5= (a – b)(a^4 + a^3b + a^2b^2 + ab^3+ b^4)$

Algebra formulae for Irrational Numbers

- $\sqrt{ab} = \sqrt{a}\,\sqrt{b}$
- $\sqrt{a/b} = \sqrt{a} / \sqrt{b}$
- $(\sqrt{a} + \sqrt{b})\ (\sqrt{a} - \sqrt{b}) = a - b$
- $(\sqrt{a} + \sqrt{b})^2 = a + 2\sqrt{ab} + b$
- $(a + \sqrt{b})(a - \sqrt{b}) = a^2 - b$

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